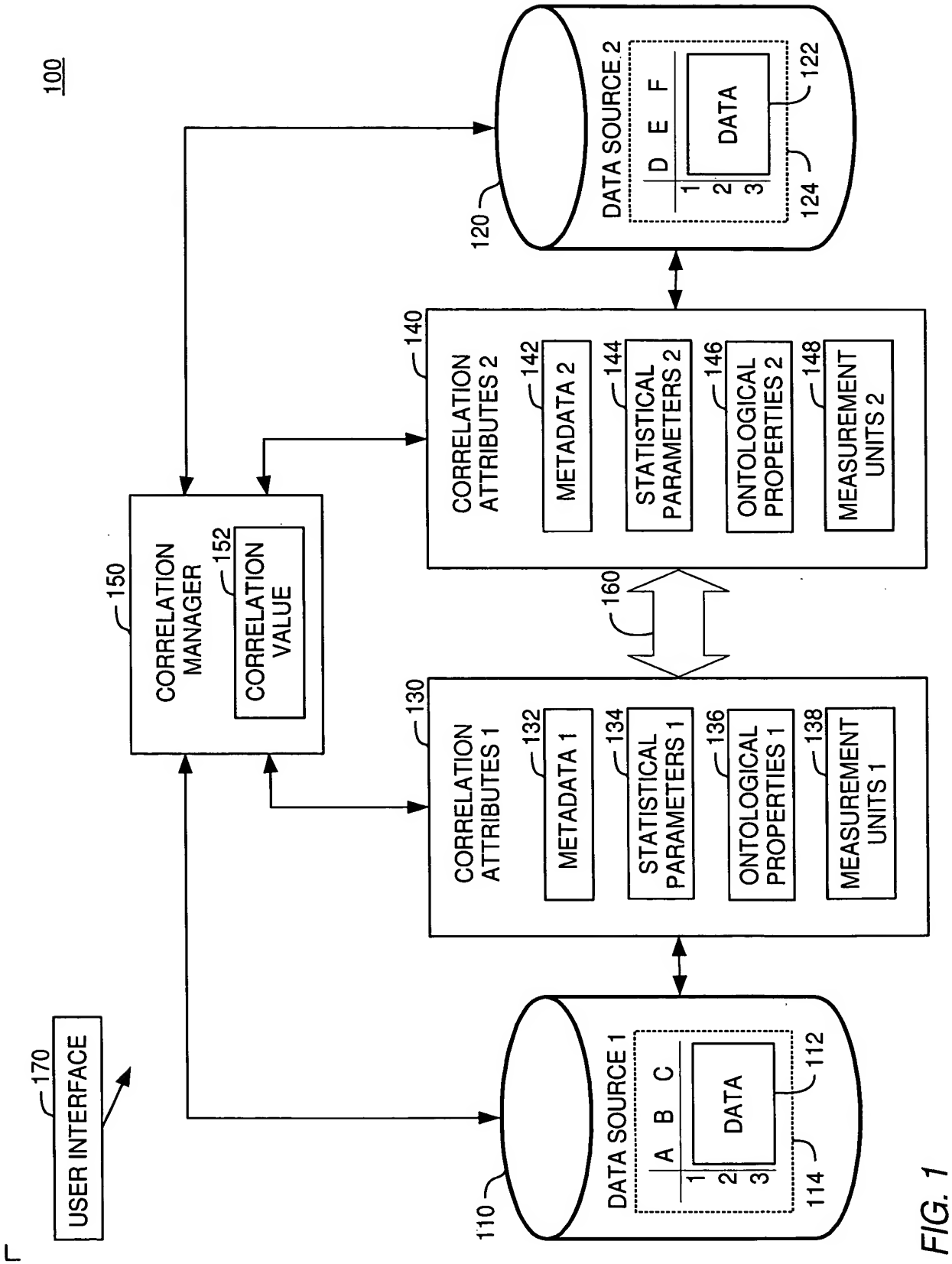
100
USER INTERFACE
170
DATA SOURCE 1
A B C
1
2
3
DATA
112
114
110
DATA SOURCE 2
D E F
1
2
3
DATA
122
124
120
CORRELATION MANAGER
150
CORRELATION VALUE
152
CORRELATION ATTRIBUTES 1
130
METADATA 1
132
STATISTICAL PARAMETERS 1
134
ONTOLOGICAL PROPERTIES 1
136
MEASUREMENT UNITS 1
138
CORRELATION ATTRIBUTES 2
140
METADATA 2
142
STATISTICAL PARAMETERS 2
144
ONTOLOGICAL PROPERTIES 2
146
MEASUREMENT UNITS 2
148
160

FIG. 1

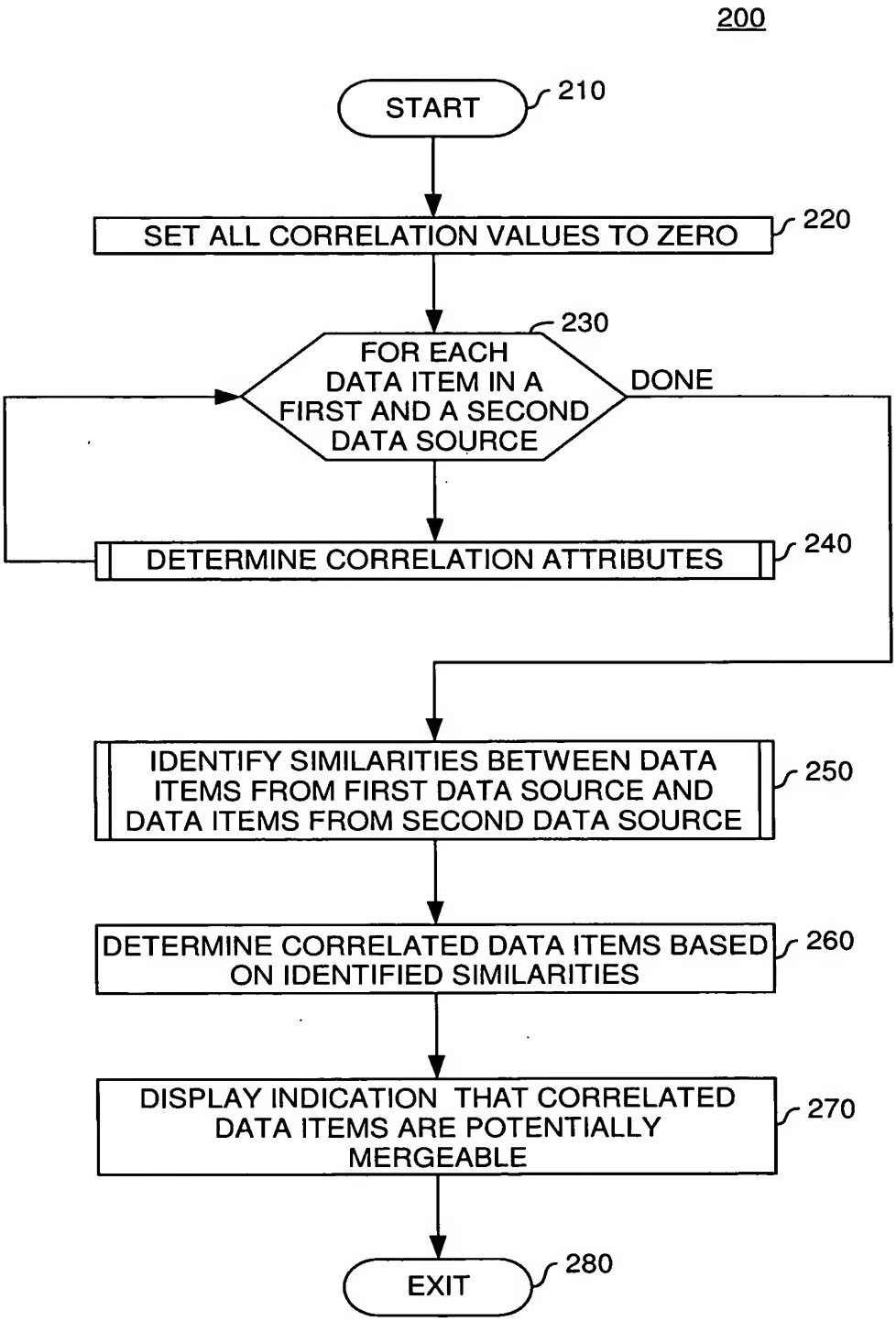
200
START
210
SET ALL CORRELATION VALUES TO ZERO
220
230
FOR EACH DATA ITEM IN A FIRST AND A SECOND DATA SOURCE
DONE
DETERMINE CORRELATION ATTRIBUTES
240
IDENTIFY SIMILARITIES BETWEEN DATA ITEMS FROM FIRST DATA SOURCE AND DATA ITEMS FROM SECOND DATA SOURCE
250
DETERMINE CORRELATED DATA ITEMS BASED ON IDENTIFIED SIMILARITIES
260
DISPLAY INDICATION THAT CORRELATED DATA ITEMS ARE POTENTIALLY MERGEABLE
270
EXIT
280

FIG. 2

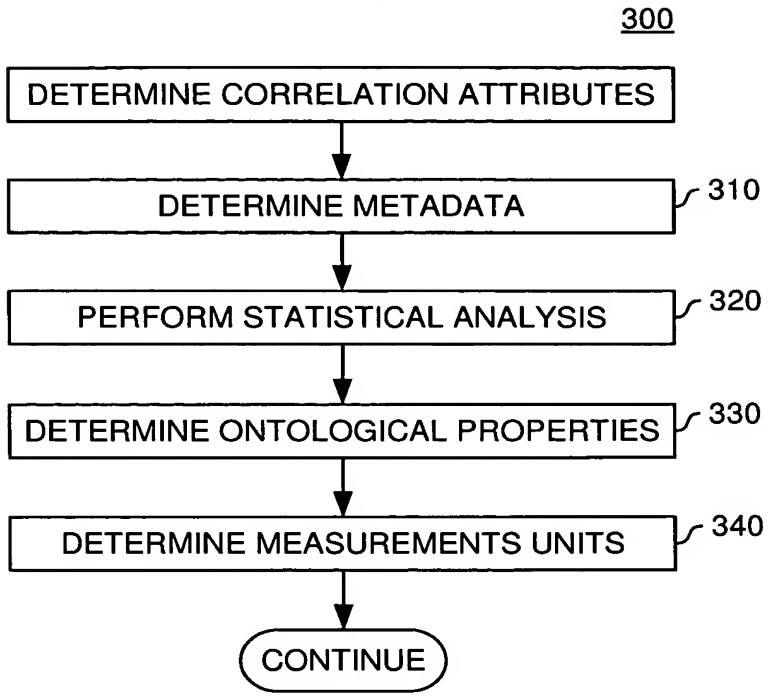
300
DETERMINE CORRELATION ATTRIBUTES
DETERMINE METADATA
310
PERFORM STATISTICAL ANALYSIS
320
DETERMINE ONTOLOGICAL PROPERTIES
330
DETERMINE MEASUREMENTS UNITS
340
CONTINUE

FIG.3

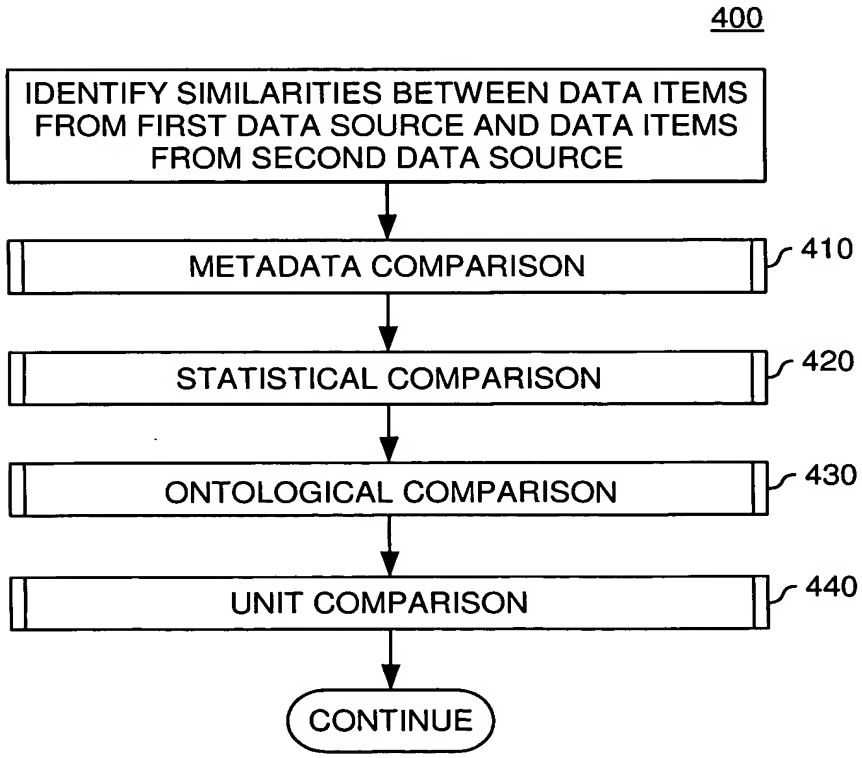
400
IDENTIFY SIMILARITIES BETWEEN DATA ITEMS FROM FIRST DATA SOURCE AND DATA ITEMS FROM SECOND DATA SOURCE
METADATA COMPARISON
410
STATISTICAL COMPARISON
420
ONTOLOGICAL COMPARISON
430
UNIT COMPARISON
440
CONTINUE

FIG. 4

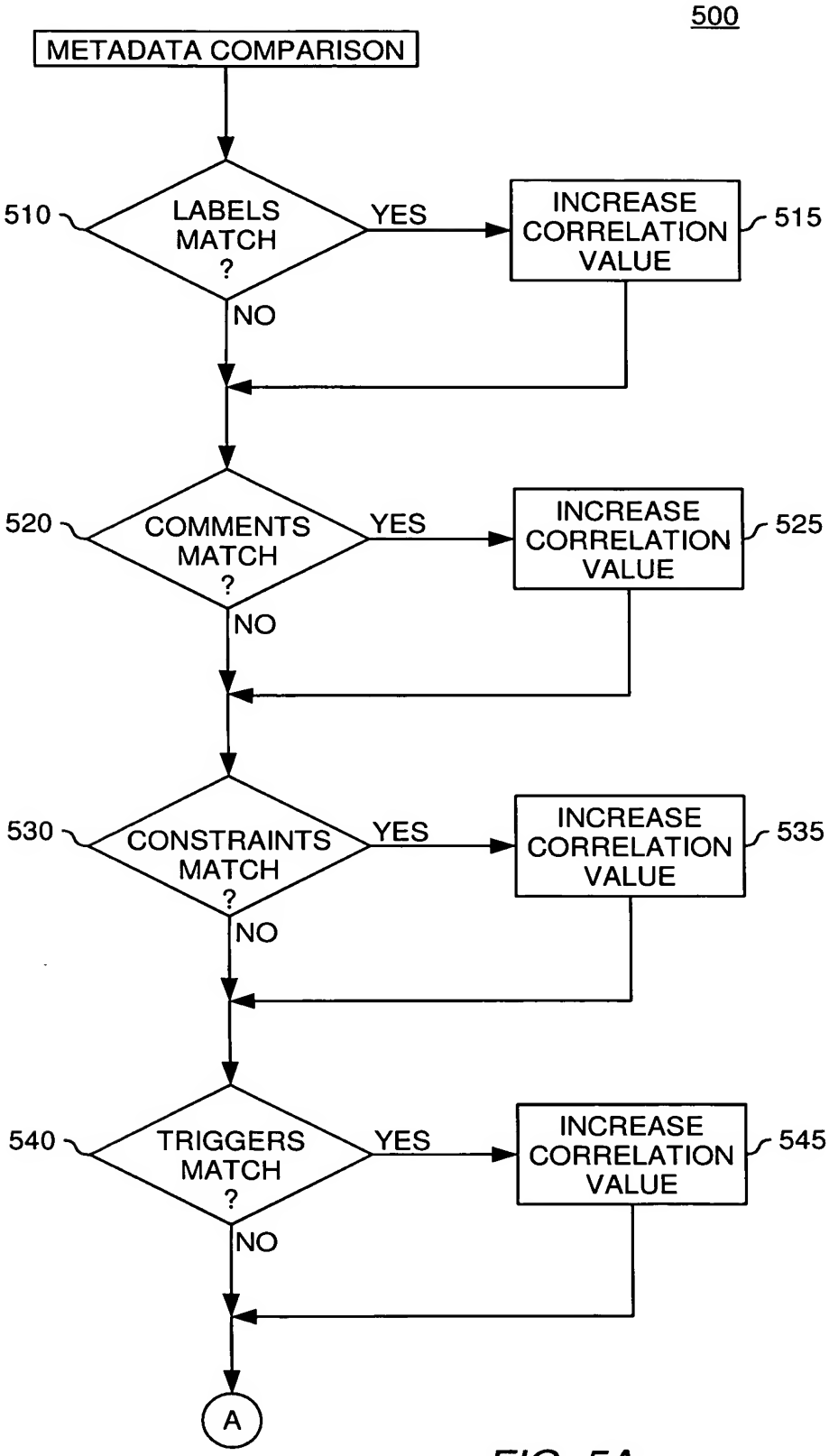
500
METADATA COMPARISON
510
LABELS MATCH ?
YES
INCREASE CORRELATION VALUE
515
NO
520
COMMENTS MATCH ?
YES
INCREASE CORRELATION VALUE
525
NO
530
CONSTRAINTS MATCH ?
YES
INCREASE CORRELATION VALUE
535
NO
540
TRIGGERS MATCH ?
YES
INCREASE CORRELATION VALUE
545
NO
A

FIG. 5A

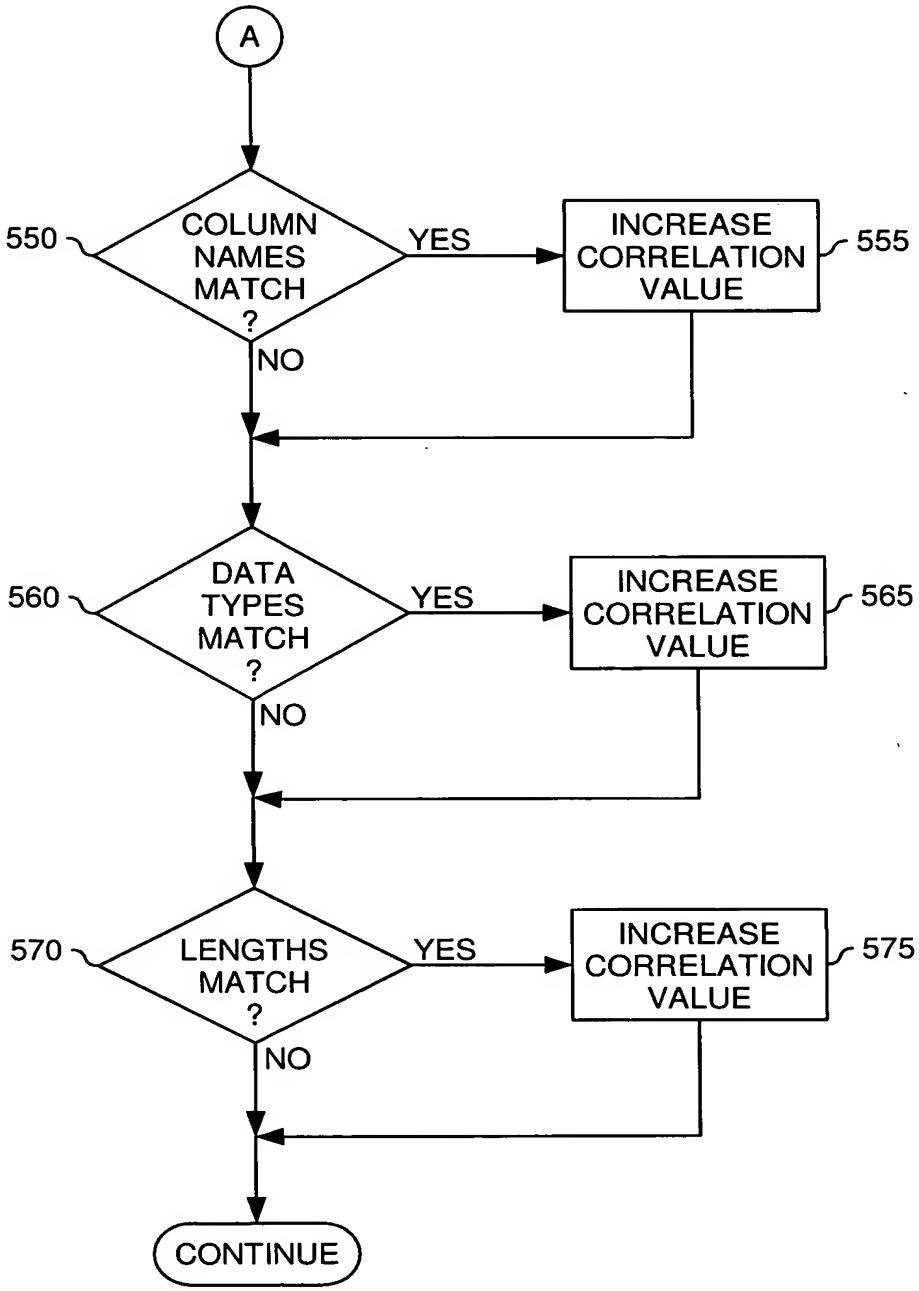
A
550
COLUMN NAMES MATCH ?
YES
INCREASE CORRELATION VALUE
555
NO
560
DATA TYPES MATCH ?
YES
INCREASE CORRELATION VALUE
565
NO
570
LENGTHS MATCH ?
YES
INCREASE CORRELATION VALUE
575
NO
CONTINUE

FIG. 5B

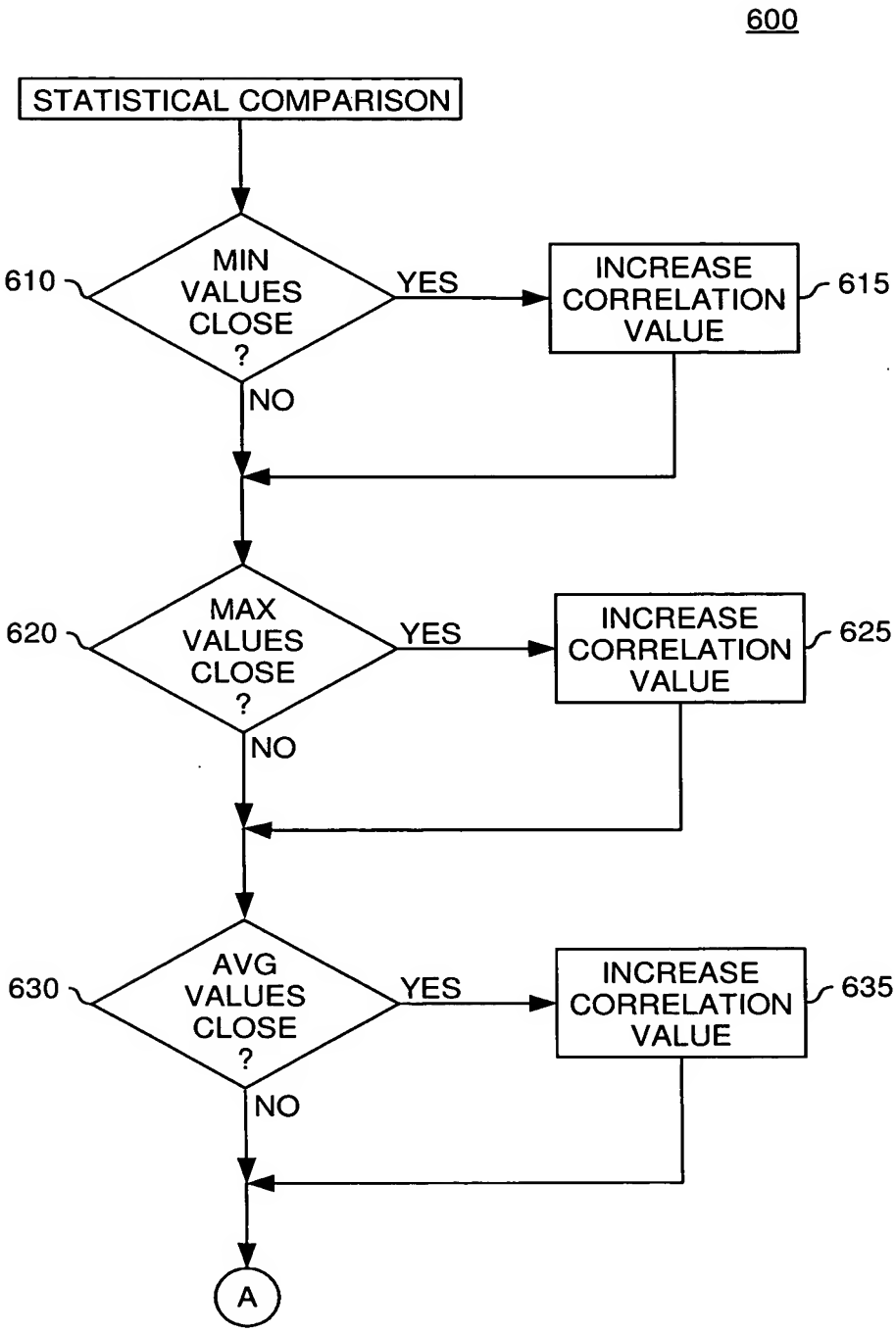
600
STATISTICAL COMPARISON
610
MIN VALUES CLOSE ?
YES
INCREASE CORRELATION VALUE
615
NO
620
MAX VALUES CLOSE ?
YES
INCREASE CORRELATION VALUE
625
NO
630
AVG VALUES CLOSE ?
YES
INCREASE CORRELATION VALUE
635
NO
A

FIG. 6A

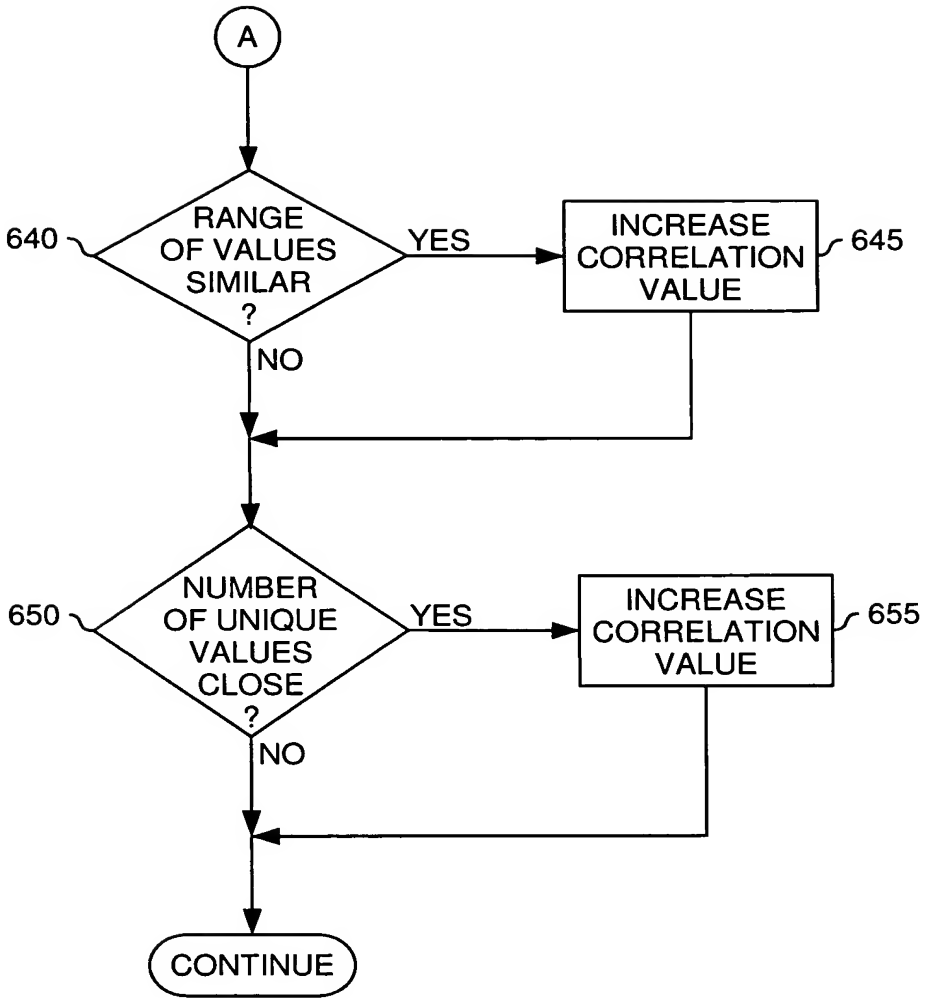
A
640
RANGE OF VALUES SIMILAR ?
YES
INCREASE CORRELATION VALUE
645
NO
650
NUMBER OF UNIQUE VALUES CLOSE ?
YES
INCREASE CORRELATION VALUE
655
NO
CONTINUE

FIG. 6B

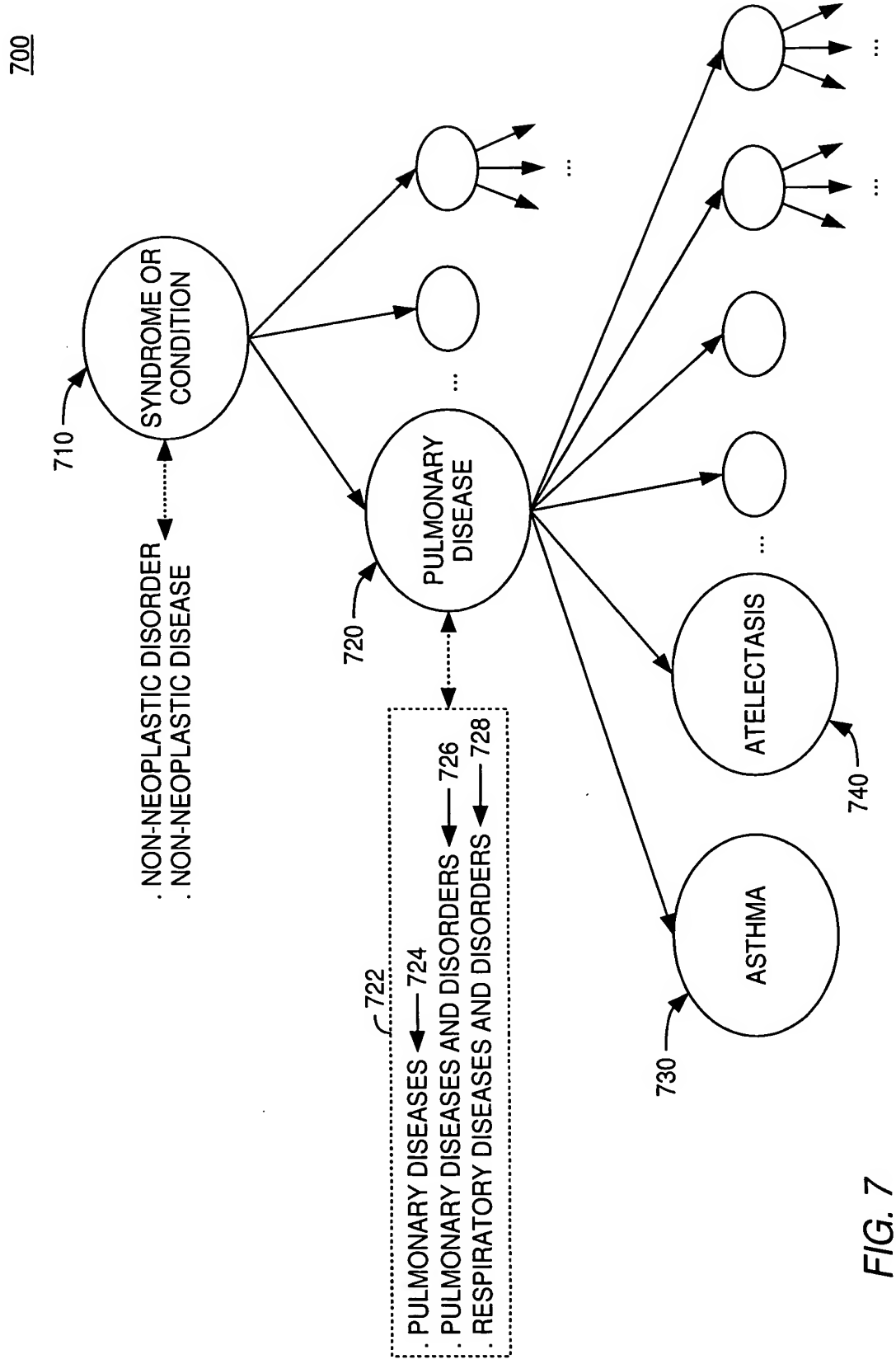
700
SYNDROME OR CONDITION
710
. NON-NEOPLASTIC DISORDER
. NON-NEOPLASTIC DISEASE
PULMONARY DISEASE
720
722
. PULMONARY DISEASES
724
. PULMONARY DISEASES AND DISORDERS
726
. RESPIRATORY DISEASES AND DISORDERS
728
ASTHMA
730
ATELECTASIS
740

FIG. 7

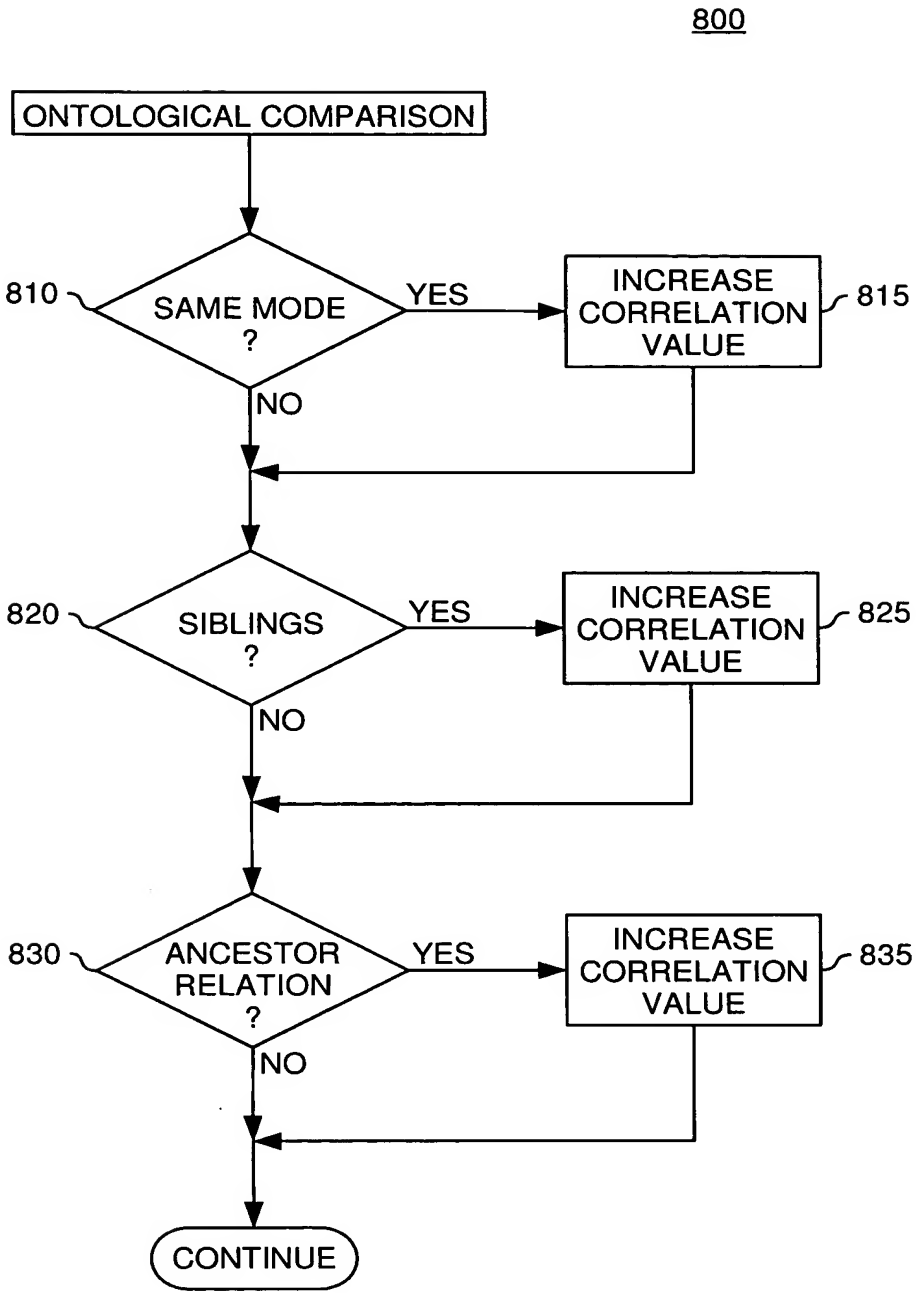
800
ONTOLOGICAL COMPARISON
810
SAME MODE ?
YES
INCREASE CORRELATION VALUE
815
NO
820
SIBLINGS ?
YES
INCREASE CORRELATION VALUE
825
NO
830
ANCESTOR RELATION ?
YES
INCREASE CORRELATION VALUE
835
NO
CONTINUE

FIG. 8

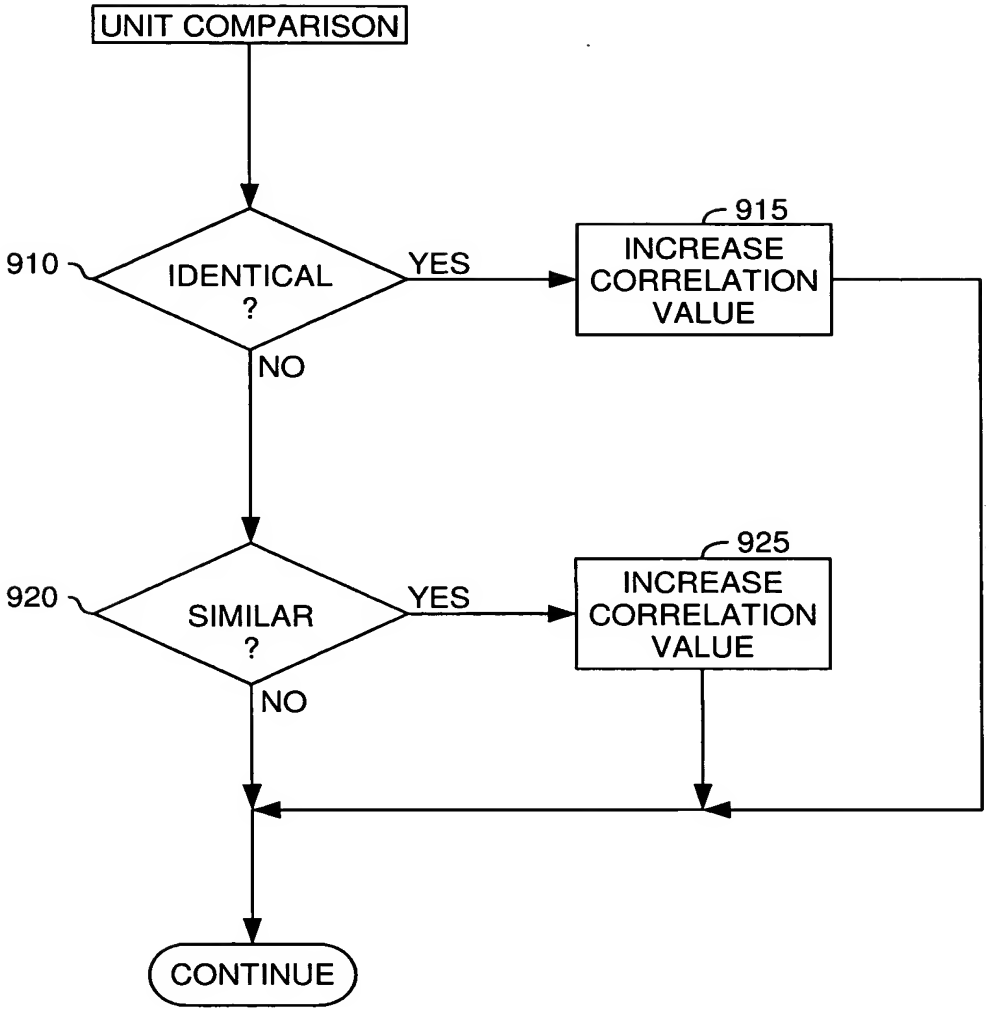
UNIT COMPARISON
910
IDENTICAL ?
YES
915
INCREASE CORRELATION VALUE
NO
920
SIMILAR ?
YES
925
INCREASE CORRELATION VALUE
NO
CONTINUE

FIG. 9

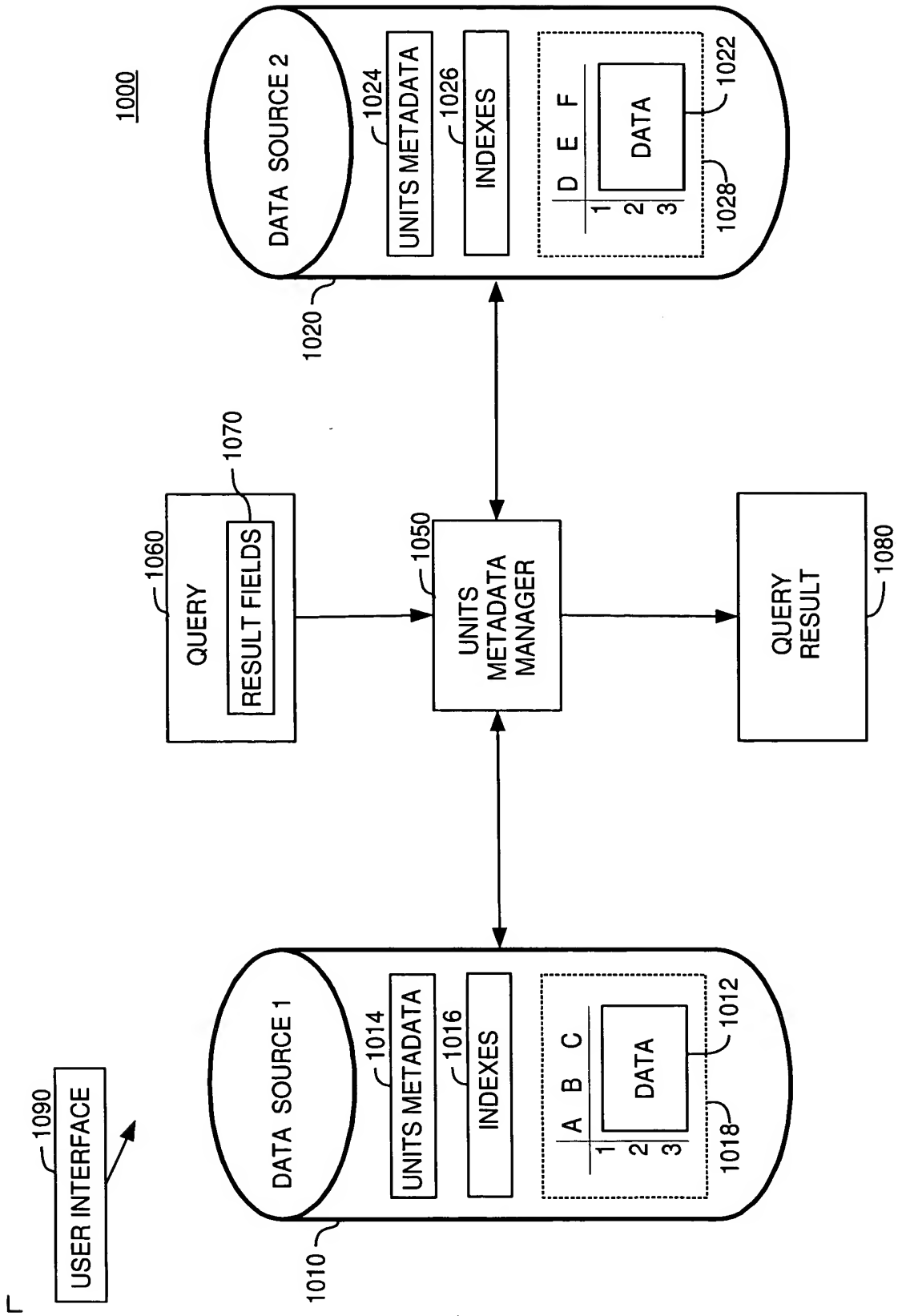
1000
DATA SOURCE 2
1024
UNITS METADATA
1026
INDEXES
D E F
1
2
3
DATA
1022
1028
1020
1070
1060
QUERY
RESULT FIELDS
1050
UNITS METADATA MANAGER
QUERY RESULT
1080
1090
USER INTERFACE
DATA SOURCE 1
1014
UNITS METADATA
1016
INDEXES
A B C
1
2
3
DATA
1012
1018
1010

FIG. 10

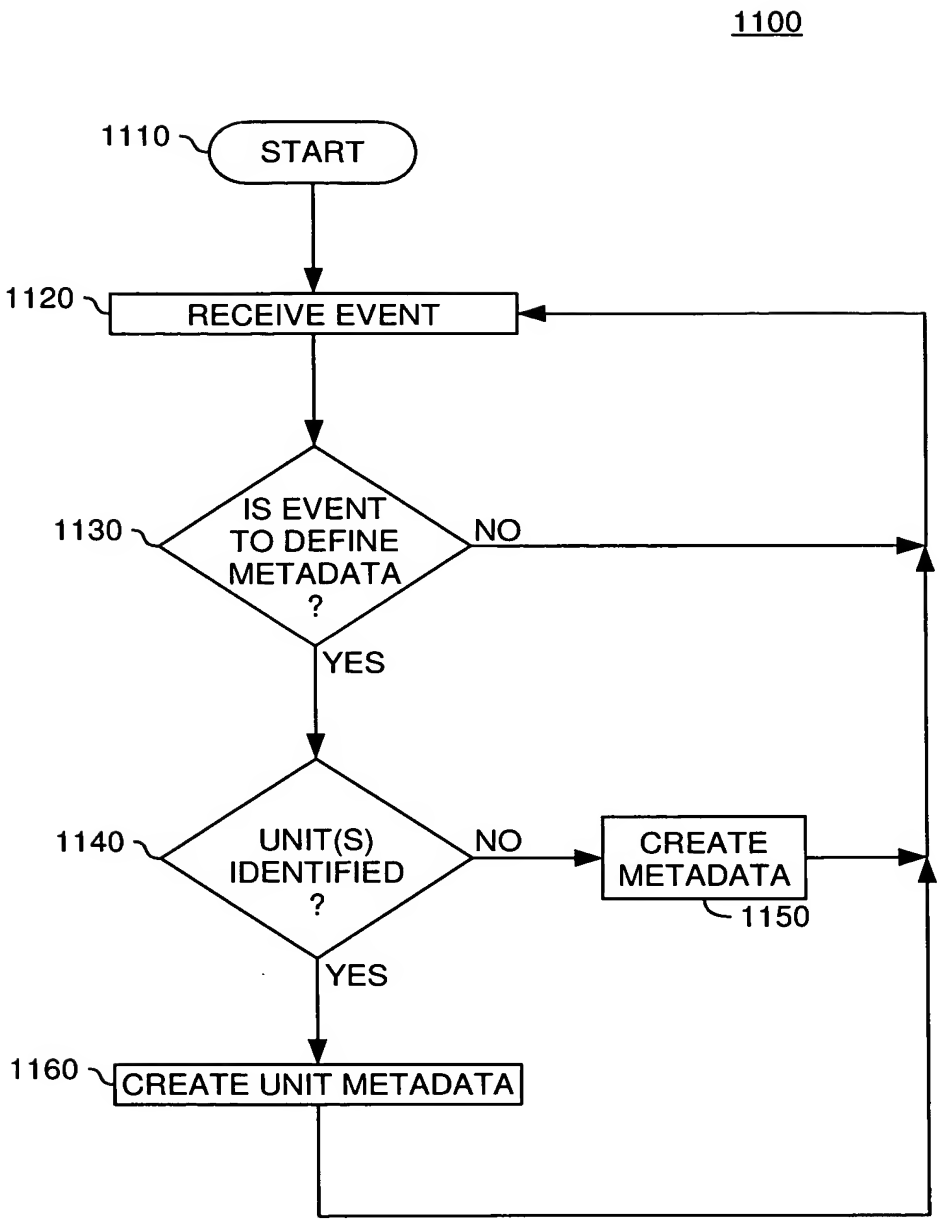
1100
1110
START
1120
RECEIVE EVENT
1130
IS EVENT TO DEFINE METADATA ?
NO
YES
1140
UNIT(S) IDENTIFIED ?
NO
CREATE METADATA
1150
YES
1160
CREATE UNIT METADATA

FIG. 11

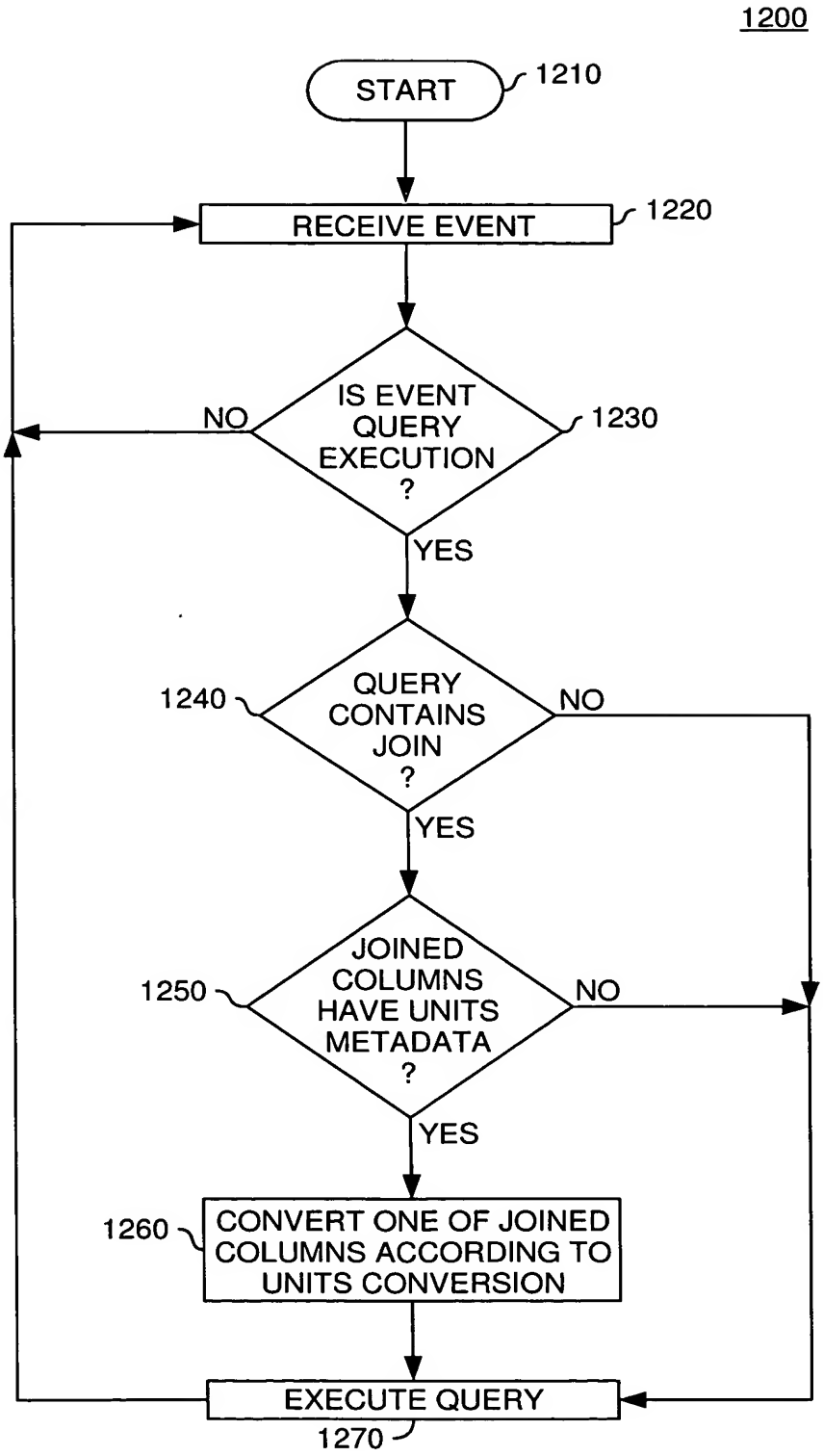
1200
START
1210
RECEIVE EVENT
1220
IS EVENT QUERY EXECUTION ?
1230
NO
YES
QUERY CONTAINS JOIN ?
1240
NO
YES
JOINED COLUMNS HAVE UNITS METADATA ?
1250
NO
YES
CONVERT ONE OF JOINED COLUMNS ACCORDING TO UNITS CONVERSION
1260
EXECUTE QUERY
1270

FIG. 12

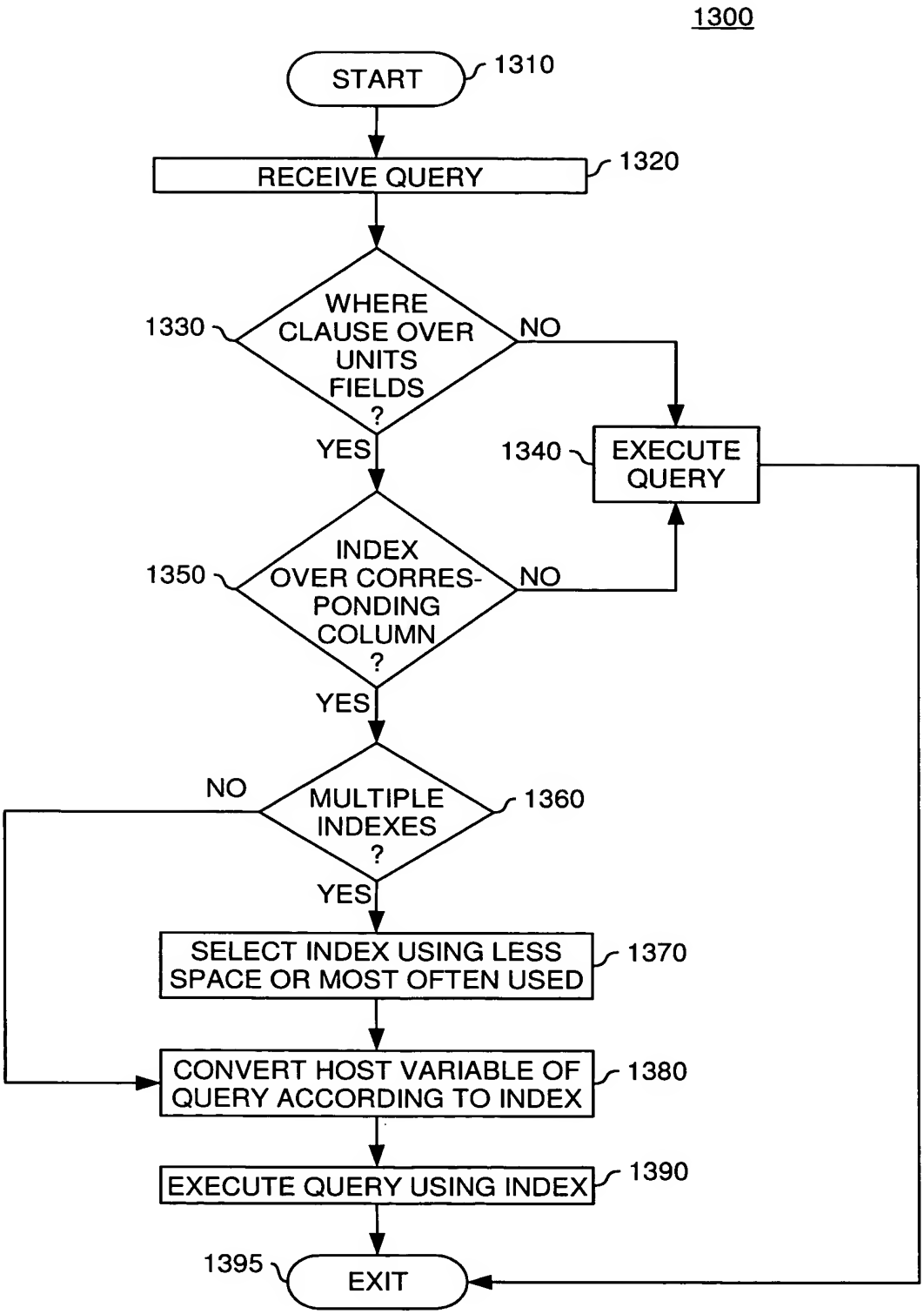
1300
START
1310
RECEIVE QUERY
1320
WHERE CLAUSE OVER UNITS FIELDS ?
1330
NO
YES
EXECUTE QUERY
1340
INDEX OVER CORRES-PONDING COLUMN ?
1350
NO
YES
MULTIPLE INDEXES ?
1360
NO
YES
SELECT INDEX USING LESS SPACE OR MOST OFTEN USED
1370
CONVERT HOST VARIABLE OF QUERY ACCORDING TO INDEX
1380
EXECUTE QUERY USING INDEX
1390
EXIT
1395

FIG. 13

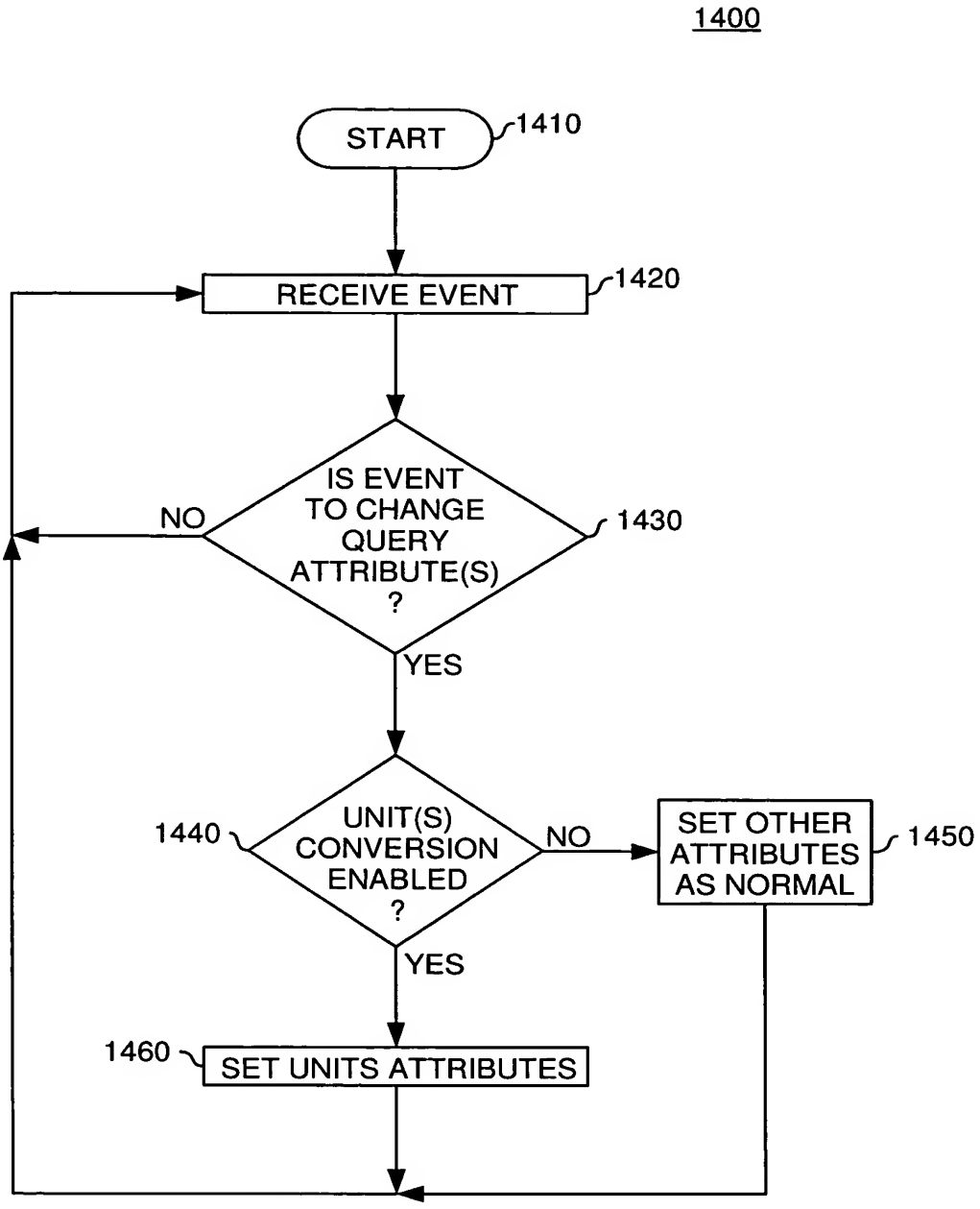
1400
START
1410
RECEIVE EVENT
1420
IS EVENT TO CHANGE QUERY ATTRIBUTE(S) ?
1430
NO
YES
UNIT(S) CONVERSION ENABLED ?
1440
NO
SET OTHER ATTRIBUTES AS NORMAL
1450
YES
1460
SET UNITS ATTRIBUTES

FIG. 14

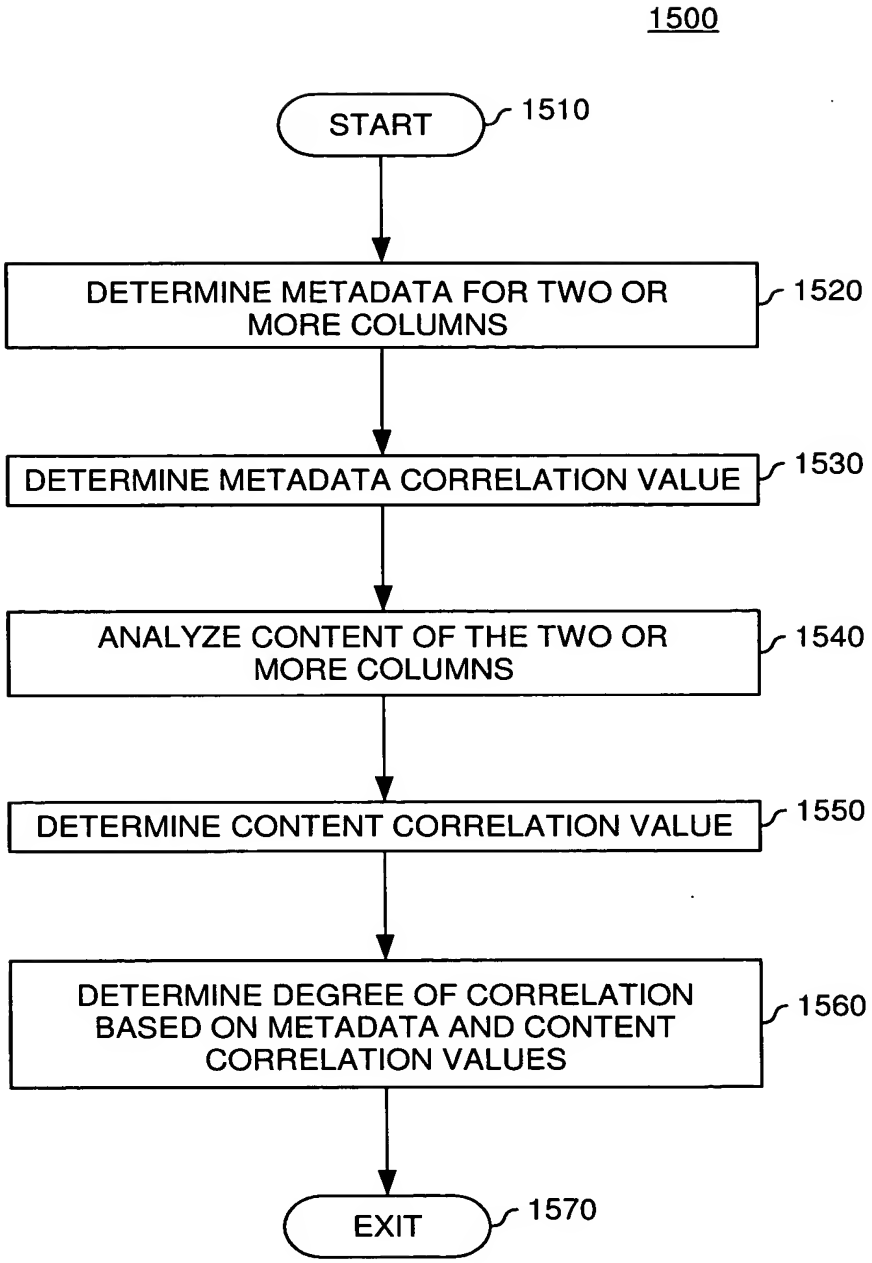
1500
START
1510
DETERMINE METADATA FOR TWO OR MORE COLUMNS
1520
DETERMINE METADATA CORRELATION VALUE
1530
ANALYZE CONTENT OF THE TWO OR MORE COLUMNS
1540
DETERMINE CONTENT CORRELATION VALUE
1550
DETERMINE DEGREE OF CORRELATION BASED ON METADATA AND CONTENT CORRELATION VALUES
1560
EXIT
1570

FIG. 15